THE MEDICAL JOURNAL OF AUSTRALIA.

Vol. I.—2ND YEAR. SYDNEY, JUNE 26, 1915. No. 26.

The Stewart Lectures.

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III.

THE INFLUENCE OF CLIMATE, DISEASE, AND SURROUNDINGS ON THE WHITE RACE LIVING IN THE TROPICS.

I am conscious that the address which I have been invited to deliver deals with a subject which has attracted considerable attention for a long time, and has become more prominent within the last few decades, namely, the influence of climate, disease and surroundings on the white race living in the tropics.

The facility of transport and communication have brought the tropics nearer to the temperate zone. An ever-increasing demand for tropical products for our daily life has arisen, and many of them have entered into the constant consumption of every family in the United Kingdom. Moreover, the tropics supply raw material for manufacture upon a constant supply of which more than 20 millions of wage-earning inhabitants of Great Britain depend for means of existence, and, above everything, the "transplantation of the redundant masses from overcrowded areas to areas where their services are urgently required, has become recognized as one of the highest functions of civilization."

The process of expansion, however, soon brought to light a broad line of demarcation between the economic conditions of the temperate zone and the tropics, and the attractions offered by the tropics could hardly be resisted by the masses, in spite of the drawbacks due to climate and disease.

It is perhaps necessary, in the first instance, to define what we mean by "tropics." According to the geographical definition, the equatorial zone includes the country between latitude 23° 27′ north and 23° 27′ south of the Equator. As might be expected, however, the geographical definition is not coincident with the isothermal charts, and Supan limited the tropical zone to the region situated between the two mean annual isotherms of 68°, a temperature which coincides with the northern and southern limits where palms flourish—the truest expression of the tropical clime.

Within these limits, however, the meteorological conditions are so diverse that one is hardly justified in speaking of a uniform tropical climate, of which, according to our conception, the main characteristics should be the highest temperature and the highest humidity.

These peculiarities of the tropical climate are most pronounced in regions situated near the coast which are low-lying, and which, on account of their natural advantages, are the centres of settlement by Europeans. There the mean temperature is very even, and the uniform distribution of temperature involves uniform pressure distribution.

The great humidity of the air is an outcome of the enormous extent of the sea, and of the large tracts covered with dense, luxuriant vegetation.

The influence of the tropical climate on Europeans is an extremely complex subject. Amongst the conditions to which the deleterious and debilitating effect of the climate is ascribed may be enumerated the excess of sunlight, the humidity of the atmosphere, and the equable temperature. It is, however, extremely difficult to estimate the influence of these factors upon the white man living in the tropics, as "there always enters an element of uncertainty owing to the absence of absolute means of measurement and the variability of other hygienic surroundings."

Among other factors, one may mention the untoward effect of unsuitable clothing, housing, improper food, alcoholic excess, and last, but not least, of the infections with parasites belonging to the animal or vegetable kingdom which occur in great abundance, and are, in many instances, confined in their distribution to tropical regions.

Of the three climatic factors, the sunlight can be the most exactly studied, and Paul Freer, of the Manila Bureau of Science, was the first to make comparative measurements of those rays of the solar spectrum—the violet and the ultra violet rays—to which most of the effect of tropical sunlight is usually attributed.

For this purpose the photocatalytic decomposition of oxalic acid in the presence of uranyl acetate has been employed. Oxalic acid, when exposed to the sunlight in the presence of uranyl acetate, is decomposed into carbon monoxide, carbon dioxide, and water, and it has been shown that this reaction is brought about almost entirely by the rays in the violet and ultraviolet portions of the spectrum, and that between certain limits the influence of temperature on the rate of reaction may be neglected. A comparative measurement of the intensity of sunlight in those particular rays may therefore be made by determining the extent of the decomposition in a standard mixture of these compounds, when exposed to the sunlight under standard conditions. The Manila authorities have devised such standard condition as to hours of exposure, concentration of solutions, size of vessel, etc., whereby observations may be made daily over reasonably long periods, and an average figure obtained for comparison with similar observations made in different parts of the globe. Such observations have been made at Manila and Baguio, in the Philippines, 14° 13′ north, Kuala Lumpur (Malay) 3° 10′ north, Honolulu (Hawaii) 21° 18′ north, Khartoum (Soudan) 15° 31′ north, and other places.

Daily observations by this method have been made in Townsville since February, 1913, and the figures

show that Townsville has an exceedingly high insolation as far as these rays are concerned.

The curves show a comparison of the figures obtained at Townsville with those found during identical months in 1911 at other places mentioned, as far as the data will allow. The figures in each case refer to the average percentage of oxalic acid decomposed per hour between 9 o'clock in the morning and noon.

At Manila, the maximum was 17.8 and the minimum 1.15 during fifteen months' observation; at Honolulu the maximum day observed out of ten months was 20.77, the minimum 3.48; Kuala Lumpur (seven months' observation) had a maximum of 18.1, and a minimum of 9.0; Khartoum (three months) gave a maximum figure of 20.8, and a minimum of 14.7. The average was 17.6, or 5.15 higher than Manila. At Townsville, during the seven months, a value of 21 was reached on no less than eight days, much higher than any recorded at the above places. Curiously enough, the figures obtained in Brisbane, where observations have also been made during this year, were higher still, the maximum recorded being 23. Thus, so far as these particular rays are concerned, tropical Australia appears to take a high place.

The influence of high temperature upon the animal and human organism has been extensively studied, experimentally and by actual observations carried on in the tropics.

The animal body is capable, not only of regulating its heat production from the combustion of food stuffs, but also its loss of heat from water evaporation.

Normally, the thermal effects of the surroundings are compensated either by a suitable transference of heat to the surroundings, or by conservation or production of heat within the body, so that, practically speaking, the body temperature remains the same within narrow limits.

The higher the temperature of the surroundings, the less heat will be lost by radiation, and if this temperature exceeds that of the body, no heat can be lost in this way, and the body temperature would rise, were it not for the loss of heat occasioned by evaporation of water from the lungs and from the surface of the body.

High temperatures alone therefore do not change the body temperature so long as the latter can be regulated by the loss of sufficient heat through water evaporation.

The numerous observations as to the body temperature of Europeans in the tropics vary slightly in their results. The consensus of opinion, however, seems to point to the fact that a slight rise of body temperature may be noticeable during the passage from a temperate to a tropical clime, varying between 0.36° and 1.5° F., but experienced observers, like Plehn, in the Kamerun, and Eijkman, in Java, have proved that there is no increase in the body temperature of acclimatized Europeans whilst resting or taking moderate exercise, the readings in the axilla varying between 97.9° and 99.1° F.

The coloured population in the tropics shows, according to numerous observations, practically the same body temperature as acclimatized Europeans. It is a well-known fact that even in a temperate zone exercise causes a rise in body temperature, and, as might be expected, this rise is more exaggerated in the tropics, and most marked on a steamy hot day. Our own observations in this respect are still too few and far between to make definite statements, but agree with Plehn and Eijkman's observations.

A comparative study of the skin temperature of a white and coloured population in the tropics has been made by Aron, in Manila, by means of a specially-constructed thermocouple, which made accurate readings possible to within one-tenth of a degree, and his results are extremely significant.

It was shown that the naked skin, if exposed to the rays of the sun, is warmed very quickly to about 97° F. If one side be kept in the shade and the other exposed to the sun, the differences in temperature on the two sides may amount to as much as 5.40° F. Above 97°, with a maximum air temperature of 98.6° F., the temperature of the skin no longer increases. On the contrary, if exposure be continued, the temperature falls more or less coincident with the outbreak of perspiration—the greater the outbreak of perspiration the greater the fall in the temperature of the skin.

In comparing the skin of the white man with that of the brown man, Aron finds that on exposure to the sun the skin of the brown man absorbs more heat than does the white skin in the same length of time.

As brown skin absorbs a greater quantity of rays than white, the point where sweat secretions begin is reached earlier than in a white skin, and as soon as this point is reached the skin is cooled by water evaporation. The regulating apparatus of the brown man is thus more sensitive, and works more promptly and successfully than that of the white under similar conditions.

Aron further points out that at a time when the white man is perspiring profusely over his entire body, and the sweat is dropping from his face and forehead, the brown man shows only a fine, velvet-like layer of very small drops on his skin.

It is thus not the sweat which we see, but the sweat which we do not see, which exerts the cooling influence. In other words, the water evaporated, not the water secreted, is of value.

We will consider now the influence of the increased temperature on the sum of the chemical changes of the human organism, called the metabolism. The life of the single cell as the unit of the cell complex, which forms the human and the animal body, requires the constant supply of a certain amount of energy, and this energy is produced by the oxidation of the food by the oxygen of the air which enters the blood stream by way of the lungs. The expression of the total chemical action of the body is the body temperature.

In case a European is transplanted to a hot climate, the amount of energy required for the upkeep of the functions of the body is not increased; if anything, it might be expected to be decreased, and as the body temperature of an acclimatized

European is normal, *a priori*, the metabolism should be exactly the same as in a temperate climate.

Amongst the investigations which have been conducted in this direction, mention may be made of those of Rubner on human beings, and those of C. J. Martin on animals. In both cases the experiments were carried out under artificial conditions, the subject being placed in a specially-constructed respiration chamber, maintained at varying temperatures and stages of humidity, and balance-sheets were drawn up between intake of food, water, and oxygen, and output of carbon dioxide and water.

The general results of Rubner's experiments showed that with scantily-clad human beings there was, with rising temperature, a decrease to a minimum of the excretion of carbon dioxide, averaging about 75% per degree, whilst the excretion of water was considerably increased.

At lower temperature, water was secreted almost entirely by the lungs, whilst at higher temperature the skin began to perspire, the evaporation increasing with rising temperature.

A similar reduction in the output of carbon dioxide under the same conditions was also observed in Martin's experiments on animals.

Eijkman carried out similar experiments in Java under natural conditions on Europeans and natives. These experiments, although few in number, seem to show that the metabolism of an acclimatized European living in the tropics does not show any appreciable difference from the European standard, that nearly the same number of calories per kilogram of body weight is required, *viz.*, 33.1, in comparison with 34.9, a difference which is well within individual variations, and that the chemical metabolism of the organism is not being called upon for the regulation of body heat to a lesser extent than in a temperate climate. The experiments related are, however, by no means conclusive, and a good deal of work is still required to bring order into the chaos of facts which have been collected.

Of the organs of the body, the blood is suspected to suffer most under the influence of a tropical climate, and the term "tropical anæmia" can be found in nearly all text-books of older date, as an idiopathic anæmia occurring in the tropics. With the advance of knowledge of parasitology, cases of this complaint have become rarer and rarer.

Idiopathic tropical anæmia is most probably only skin deep; in other words, the anæmic looks of many of the white people living in the tropics are caused by the coarseness and dryness of the epidermis.

Eijkman's observations on the number of blood corpuscles, the quantity of red colouring matter, the hæmoglobin, and on the specific gravity of blood and plasma of acclimatized Europeans in the East Indies, pointed to the fact that the tropical climate, as such, does not lead to any appreciable change in the quality of the blood.

Similar observations have been made by the American workers in the Philippines. The blood examinations of healthy young American soldiers (1,418 red cell counts and 1,433 hæmoglobin estimations on 702 soldiers) after twenty months of Philippine service gave the same results as those recognized for healthy young men in the temperate zone.

The observations of the Philippine observers are extremely interesting, but are lacking in one respect, *viz.*, the subjects chosen for observation had only been living in the Philippines for a comparatively short time, and were especially chosen healthy individuals, who had to undergo a strict medical examination before being sent on service abroad. For some time observations on the same lines have been carried out in Townsville. The blood of school children has been carefully examined. This examination has proved that there is no appreciable difference between the blood of children of the second and third generation as far as the number of formed elements of the blood is concerned.

We (Dr. Priestley and I) have, however, been able to make very interesting observations. Some time ago Arneth made a careful and systematic study of a certain class of white blood corpuscles, the polymorphonuclear neutrophile leucocytes. The leucocytes, when stained by different dyes, possess a large, irregularly-shaped nucleus, sometimes resembling a horseshoe, sometimes split up into a number of nuclei or nuclear fragments, so that in numbers of them three, four, or more apparently distinct nuclei can be differentiated.

Arneth observed a definite relationship between the number of cells possessing one, two, or more nuclei, his relative figures being based, as a rule, on 200 consecutive cells found in a stained specimen. By adding up the number of cells containing one and two nuclei, and comparing it with the number of those showing three and more nuclei, an index was obtained, usually called after the author "Arneth index."

He named the conditions when the first and second class, containing one or two nuclei, were increased above the normal number, and the third and fourth correspondingly decreased a shift to the left, whilst the reverse alteration is a shift to the right. Arneth considered a shift to the left as a sign of lowered resistance to disease.

Whilst examining the blood of Filipinos, Chamberlain and Vedder found a very marked shift to the left in Filipinos in comparison with that of normal Europeans.

Our own observations on the blood of healthy school children have shown that there is a decided shift to the left of the Arneth index, and the figures obtained are nearly identical with the figures obtained in Filipinos.

This observation is exceedingly interesting, as it is a change which may be due to the climate alone. Careful work will, I hope, throw further light on this change, whether it is the expression of a lowered body resistance to certain maladies or without any marked significance.

Our work as regards the blood pressure of North Queensland children shows that it does not differ to any appreciable extent from the blood pressure of normal European children, showing a mean of about 116 mm. mercury.

As might be expected, the climatic conditions do effect certain changes in the inner workings of

the organism. The excessive perspiration relieves the kidneys of a part of their work. In a hot climate the amount of urine decreases correspondingly to the amount of fluid which is being excreted by the skin. Daily quantities of urine of only 500-700 c.cm. are common, against 1,500 in a temperate zone. The urine, however, is far more concentrated, and the smaller quantity contains the same amount of waste products as the larger volume elsewhere. The high concentration of the urine might explain the higher frequency of kidney diseases observed in the tropics.

It is of common knowledge that, as a rule, the girls attain puberty earlier in life in tropical climates. A table compiled by Raciborski shows that there is a distinct connexion between the mean yearly temperature and the age of puberty. In the northern and central parts of Europe the average age is 15-16 years; in southern Asia 12 years and 10 months is given as the average age. Glogner's observations in the East Indies show that out of twenty-five girls of European descent, and born in India, in eighteen cases puberty came at an earlier age than in Europe; as a matter of fact, at the same age as in half-caste girls.

The foregoing observations show that our knowledge of the influence of the climate in the stricter sense is very limited indeed. Disconnected facts have been gathered at different times, and under different and often very adverse conditions, and, above everything, the work has up to now not been sufficiently extended to allow of the formation of definite conclusions, especially in the direction of investigation of the most minute physiological functions of the organism under tropical conditions.

All changes would be expected to become noticeable very gradually, and such changes, if taking place, would be hardly observable in the first generations, would be more marked in the second, and become apparent to the naked eye in the third generation, or perhaps even later.

As proof I may quote our own observations on the "Arneth index." A few observations on Europeans acclimatizing in the tropics showed a slight shift to the left, which, however, was still within the individual variation. In the third generation, on the other hand, a distinct and unmistakable shift to the left was present.

I am convinced that when our work has progressed far enough to exclude gross changes, that numerous and careful observations on the physiology of the human organism under tropical conditions will show that certain minute changes do take place, and will become more marked in succeeding generations.

The second chapter of our lecture deals with the influence of disease upon the white settler in the tropics. This influence of parasitism has been more thoroughly studied, and the advances made within the last fifteen years in tropical parasitology and bacteriology have revealed to us host upon host of new and deadly parasites, which are solely confined in their distribution to tropical regions.

Ross' discovery of the transmission of the malaria parasite by a certain species of mosquito has taught the world that many of the conditions previously attributed to climate *per se* are due to parasitic causes.

It is not long since malaria was attributed to climatic influences only, and Annesley's statement that "The severity of these diseases is generally in proportion to the warmth of the climate or season in which they occur" was generally accepted.

Anywhere in the tropics where white settlers went malaria formed a formidable barrier. Soon after their arrival they contracted the fever, and whether in Africa or South America or New Guinea white tombstones marked the tracks of the first pioneers with inscription that they died of fever. Numbers of them took flight, and returned to Europe, often invalided for life, and hardly able to obtain colours glowing enough to describe the "New country as a devil's paradise."

And the children! It is a pitiful sight to see in an endemic malarial centre the small children suffering from chronic malaria. The complexion is ashy grey, the face is œdematous. They are pot-bellied, and one can often see without palpating the abdomen the outline of the enormously enlarged spleen.

On considering in a general way the mental and bodily progress in the course of the whole human life, it becomes apparent that a child in its early infancy is capable of assimilating mentally many times the amount any adult could possibly digest in the same space of time. If the mental capabilities are curtailed during infancy on account of chronic malaria or any other chronic debilitating disease, much valuable time is lost for the further development, and backwardness, due to lost opportunities, will become apparent and more and more pronounced as the child grows older.

Of other diseases, yellow fever has been an important factor in checking the stream of emigrants to countries where this particular disease is prevalent.

I remember how one used to look with pitying eyes on the newcomers in North Brazil, knowing for certain that nearly 25% to 40% of all would, within a short time, succumb to this disease.

Parasitism, on the whole, is much more common in the tropics than in a temperate climate, since the conditions for the development and spread of animal parasites are more favourable, on account of the humid and hot temperature. The infections with helminth are extremely common throughout the tropics. The most dreaded of all such infections is agchylostomiasis, which is so common and widely spread. The adverse influence which this infection has upon children, especially in early years, can hardly be over-estimated. Many of the infected children are pale, listless, take no interest in their surroundings, are very irritable, their night's rest is disturbed, their appetite is impaired, and the little sufferers show a perverse craving for all sorts of rubbish, earth, sand, wood, paper; in fact, there is hardly anything which can be swallowed which

is not eaten at one time or another by the children suffering from this disease.

In case the patients are not treated at an early stage of the disease, and the infection becomes chronic, the children are marked for life, and present the typical aspect of a degenerate.

When examining school children, one is always able to pick out the children suffering from agchylostomiasis, who are at the same time, as far as their progress at school is concerned, dull and obstreperous.

The much-quoted example of modern sanitation in the tropics, such as Ismalia, parts of India, and the West Coast of Africa have given conclusive evidence that a great deal of deteriorating influence which has been attributed to climate, as such, is, in fact, only due to parasites, and that with the awakening of our knowing of parasites, their life histories and intermediary hosts, the curse which has been lying on many parts of the tropics has been removed.

The question of the influence of surroundings upon the white race in the tropics is still more complex. Personal hygiene, as clothing, housing and food, are all factors which have an important bearing upon the personal welfare of white men living in the tropics. Even the smallest and apparently negligible detail may give rise to serious consequences. One example may illustrate this statement. Frequently children are brought to the hospital, the parents complaining of the child being unwell, peevish, and listless. Other children are brought in showing clinical symptoms of fully-developed lead-poisoning, drop wrist, drop foot, blue line in the gum, etc. The clinical examination of the urine and fæces showed the presence of lead in the excrementa, sometimes in considerable quantity. The most obvious explanation, after excluding the water supply, is that given by previous observers, namely, that the lead paint of the verandah rail became softened by the heat or dried up in the sun, and the little mites ingested enough of the paint by putting their fingers into the mouth to become seriously ill, and often crippled for lifetime.

Furthermore, one has to consider the surroundings from a sociological point of view, which side issue would be better dealt with by a sociologist.

Experience of life during my residence in different parts of the tropics may perhaps justify the expression of my personal opinion. As a rule, when compared with the overcrowded parts of Europe, the conditions of life are much easier in the tropics. The competition is less on account of the sparsity of the white population, salaries are larger, and in the parts with a large native population, numerous servants can be obtained for very small wages, so that the proud white man is not forced to do any menial work, and his position is that of a supervisor.

The hot sun, the abuse of alcohol, the proud position into which the average man has been placed tends to bring forth a considerable change in his character. The amount of energy required to produce the necessities of life, which are, on the whole, smaller than in a temperate climate, is lessened, and the healthy, vigorous young man who emigrated to the tropics becomes afraid of work, unable to concentrate, and, generally speaking, a weakling.

The mental picture I have drawn, however, is fortunately not the rule, but is only an extreme example of the influence of the changed surroundings upon a weakling whose energy in a temperate climate was only kept up by the fight for his daily bread. The European with energy and ambitions will, as a rule, be only slightly affected by the changed conditions of life and the alteration of his social condition. Even he will lose a certain amount of his energy; he will feel tempted to succumb to the fascination of the *dolce far niente*. A call on his energy will, however, always be answered, and he will be able to do nearly the same amount of work bodily and mentally as anywhere in Europe.

The white woman who emigrates to the tropics will be much more affected by the change of surroundings than the man. During the hot hours of the day she is compelled to stay in the house, and, as most of the housework is done by coloured servants for very small wages, she will have hardly anything to occupy her mind. The social conditions are altered in comparison with those in which she has been reared. The social gaity of life to which she has been accustomed is non-existent, and very soon she will begin to fret, and the lack of outdoor exercise will accomplish the rest. The woman will soon be discontented and home-sick, and her only subject of conversation will be the behaviour or misbehaviour of her native servants. This case again depicts an extreme. The common-sense, healthy young woman, with a good deal of *esprit de vie*, and with varied interests, will never drift so far, but even she will suffer now and again from discontent and home-sickness.

It is said, and nearly everyone agrees on this one point, that it is essential to send the children as soon as a certain age is reached (usually between five and eight years) away for their education. One has to consider that the children are left to a great extent in charge of native servants; they soon begin to realize their apparent superiority over the coloured servants; they become peevish and completely spoiled. Moreover, the imitative sense is strongly developed; the children begin to imitate the ways and habits of the coloured races amongst whom they are living.

If, now, we consider the application of the foregoing to conditions prevalent in Tropical Australia, we find that Tropical Australia enjoys, in many respects, quite a unique position amongst other tropical lands. Although situated within the tropics, it has diversity of climes within easy reach, ranging from the humid, hot, low-lying coastal districts to the bracing atmosphere of a high tableland. There is practically no native population, the few surviving aboriginals are of so little importance that their influence is not felt.

The absence of a native population makes the dealing with disease an easy matter. Modern experience gained throughout the world has proved that well and discreetly administered law in a com-

munity educated in matters of hygiene and in appreciation of cleanliness, can accomplish even the most difficult task.

The absence of a native population, furthermore, does away with many of the social conditions which prevent a white community in other parts of the tropics from gaining a firm foothold.

Most of the factors constituting "surroundings" can be adjusted and improved in accordance with the knowledge gained by experience, careful research, painstaking observations, and scientific collecting of statistics.

In Northern Australia we have, therefore, only one factor which might prevent the successful colonization by a white working population, and that is "climate."

Unfortunately, as we have previously seen, our knowledge of purely climatic influence is still in its infancy, and the facts and observations collected in other tropical countries cannot be applied, as is so often done, to Tropical Australia without careful discrimination.

Years of detailed and minute research carried on in the populated coastal districts of Tropical Australia, where a second and a third generation is being reared at present, will clear up the question of the climatic influence on the white man in the tropics, and the result of this work will indicate whether the great experiment of populating Tropical Australia with a white working community can be accomplished.

It would be precarious to express a definite opinion that a colonization of Tropical Australia by a white population is possible, since statements either way cannot at present be substantiated by facts, but are only the expression of a personal opinion.

It cannot be denied, however, that Tropical Australia offers far more favourable conditions than any other tropical country for permanent white settlement.

We are faced here with one of the most far-reaching experiments of modern times, an experiment which certainly justifies the application of unlimited effort, as its result is the possession, not only of the north, but of the whole of the united Australia by a white community.

Reports of Cases.

RESECTION OF TWO FEET OF SMALL INTESTINE FOR GANGRENE FOLLOWING VOLVULUS.

By **Ralph Worrall, M.D. (R.U.I.), M.Ch.,**
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The following case presents several features of interest.

April 21, 1915, Mrs. W. R., æt. 50. The patient had had total hysterectomy done one year previously for bleeding uterus. She was very well from then until the evening of April 19, when she was seized with sudden, severe pain in the abdomen, which has continued to the present in paroxysms, unless under the influence of morphine. Vomiting set in next day, and has continued frequently to the present. For the past twenty hours the ejected matter has been very dark and offensive. The bowels acted well after a large dose of salts taken on the morning of the 20th, and again slightly after an enema on the morning of the 21st. Since then no flatus had passed, and there existed a feeling of blockage. Her own doctor saw her twelve hours after the onset of the pain, and found the pulse and temperature normal, and no abdominal distension. His *locum tenens* saw her in the evening, and reported her to be no worse, except for some vomiting. The pulse and temperature were still normal, there were pains at intervals, for which morphine was again given.

She had a bad cough for a fortnight. I saw her at 5 p.m. on the 21st, forty-eight hours after the onset of the pain. Her condition was as follows: A very stout woman, stuporose, aroused with difficulty; tongue very dry and brown; temperature 101°, pulse-rate 120; abdomen markedly distended in the lower half, as hard as a board, and extremely tender. *Per vaginam*, the vault was very tender, depressed and tensely elastic.

I diagnosed probable intestinal obstruction, and operated two hours later—50 hours after the onset of symptoms. The vaginal vault was first incised with great care, lest intestinal coils should be adherent. About a quart of bloody serum was evacuated. Very tense coils of small intestine were felt. Abdominal section was then done. There was slight adhesion of the omentum beneath the old scar. All coils of intestine visible were reddened and distended. The appendix, also red and swollen, was adherent low down in the pelvis. It was separated and removed. A large coil of small intestine was felt in the true pelvis, with a narrow pedicle, twisted several times from left to right. On raising the mass it was seen to be gangrenous, the dead tissue extending through the mesentery to the vertebral column, in the shape of a V. The whole mass was quickly clamped off in sections and cut away; the intestinal contents, consisting of black, stinking fluid, were evacuated into kidney dishes. The open ends of the bowel were crushed, ligatured and inverted with purse string suture, and then a lateral entero-anastomosis done without clamps. This latter part occupied eight minutes. I am sorry neither Dr. Edwards, who gave the ether, nor I thought of taking the time prior to this, but it is evident that the whole procedure of resection by this method can be done in about 20 minutes. No attempt was made to unite the mesentery, as its margins overlapped nicely. A rubber drainage tube was passed from the pouch of Douglas into the vagina, and another placed in the lower angle of the wound. As much as possible of the blood-stained serum was sponged out of the peritoneal cavity, and the abdomen closed.

After history.—The pulse was not markedly worse after the operation; the rate was still 120.

April 22, a.m.—Patient had not vomited, and in every way seemed better, but towards evening vomiting set in again, the vomit being black, very offensive fluid. An attempt was made to wash out the stomach, but although the tube was passed down five times, the patient dragged it out each time, and we had to trust to copious draughts of *sodii bicarb.* and hot water to effect our purpose. Dr. Edwards has suggested to me that the stomach should have been washed out on the operating table. After 36 hours the vomiting became less frequent, and the ejected matter less offensive, and by the fourth day it had entirely ceased. The abdominal distension gradually subsided, but remained slightly in evidence for a fortnight. The dry tongue and other unfavourable signs and symptoms also underwent a gradual subsidence.

The drainage tubes drained offensive fluid in large quantity for some hours. It was not possible to remove the vaginal tube permanently for twelve days.

The bowels acted spontaneously in 36 hours, and thereafter there was slight diarrhœa, as is usual when any large section of intestine has been removed.

There are several points to which one may direct attention in this case.

First as to diagnosis. A mistake was made here by two able practitioners, because of placing too much reliance upon a normal pulse and temperature. Recently, a Mr. Burgess, in the *British Medical Journal*, said he thought many lives would be saved in acute appendicitis if the pulse and temperature were never taken. I agree with him that these two signs may be most misleading in all acute abdominal trouble, and especially in acute strangulation of the intestine. Upon what then are we to rely?

Upon the history of sudden, acute pain, paroxysmal in character, with perhaps some shock, vomiting, tenderness, rigidity, and later on distension. Another misleading fact to the unwary is that the bowels may move once or even twice, as in this case, from peristalsis of the intestine, below an absolutely complete obstruction.

The tongue is an indicator to which close attention should be paid.

Volvulus of the small intestine is rare. There is not in the small intestine the rounded form and loose attachment, giving wide mobility, so often seen in the caecum and sigmoid, and predisposing to volvulus in these situations.

The torsion in the small intestine comes under the heading of what Morison calls "secondary volvulus," that is, where an artificial pedicle is formed, as in a hernial sac, or when, as in this case, a loop of bowel becomes straddled across a band formed by the appendix adherent to a point in the pelvis. Whether primary or secondary, volvulus of the intestine cuts off the circulation of the loop more or less completely. In the latter case, gangrene of the loop affected, and death of the patient rapidly ensue.

Treatment.—If operation be performed within a few hours of the onset of symptoms, it will probably be easy to unloose the torsion manually, and ensure the speedy recovery of the patient. If, on the other hand, the abdomen has not been opened until gangrene has taken place, the condition is one of the gravest in abdominal surgery.

Da Costa says: "If gangrene exists, the temptation to do immediate resection is strong. I have done it a number of times with a very large mortality. Of late, I have followed the plan of Mikulicz, and results have been far better, the gangrenous loop is brought outside and fixed parallel with the wound, and enterostomy is performed above it, the loop is dealt with later, and the fæcal fistula dealt with by appropriate means." The vision which this recommendation calls forth of invalidism and suffering to the patient, and worry and trouble to surgeon and nurses is sufficient to make one shrink from adopting it, if there be any alternative, which offers a fair chance of success. Naturally, I feel pleased I did not adopt it in this patient, who was able to walk about three weeks after operation, and was spared all the misery of a small intestine fæcal fistula.

With regard to the method of anastomosis, I notice that some surgeons at the war have been getting good results from end-to-end anastomoses in resection for bullet wounds, when operation has been undertaken within twelve hours of the wound. In such circumstances the bowel is normal, and a procedure applicable here would be quite out of place when peritonitis is present, and the lumen of the two segments of bowel differs markedly.

Lastly, this case is another striking example of the reward which occasionally comes to us if we ignore desperate conditions and finish so as to give nature a chance.

British Medical Association News.

SCIENTIFIC.

A clinical meeting of the New South Wales Branch was held at the B.M.A. Building, 30-34 Elizabeth Street, Sydney, on June 4, 1915, Dr. George Armstrong (the President) in the chair (see *The Medical Journal of Australia*, June 19, 1915, p. 586).

Dr. Ralph Worrall read the notes of a case of gangrene of the small intestine, due to volvulus, in which he had removed two feet of the bowel (see page 600).

In congratulating Dr. Worrall on the successful issue of the case, Dr. Kelly pointed out that J. B. Murphy had expressed the view that when the bowels acted after the onset of complete intestinal obstruction, the surgeon was always justified in anticipating the death of the patient. He laid this down as an axiom. The speaker thought that Dr. Worrall's case, together with others which had been observed, disproved this contention. He had been struck by the fact that remarkably good results were obtained in obstruction of the small intestine, as compared with that of the large bowel. He cited a case of obstruction occurring in a patient who had suffered for some time from a mild form of diabetes. In this case, about four feet of gangrenous small intestine had been removed. The gangrene had been caused by thrombosis of the branches of the mesenteric artery. The patient did well. He referred to other cases in which recovery had followed the removal of large tracks of intestine. On the other hand, his recent experience of the removal of large intestine had been bad. The patients nearly always died. He preferred lateral to end-to-end anastomosis with Murphy's button, although the latter was probably a shorter operation. He asked Dr. Worrall how he carried out the lateral anastomosis. It had been stated that it was not necessary to consider the question of reverse peristalsis. He was of opinion that it was wiser to provide for a continuous peristalsis, as very slight disturbance often meant a great deal to the patient. When the union had to be effected between the small and large intestine, it was advantageous to employ Murphy's button.

Dr. Binney recalled the fact that he had read a paper some years ago on a case of localized thrombosis of the mesenteric artery. In that case, there had been a spread of a septic process from an infected mesenteric gland. An action of the bowels frequently occurred when the obstruction was high up. In his patient this was the case. He operated as rapidly as possible, first of all carrying out an anastomosis of the small intestine with the ileum, as a temporary expedient. Had he made an artificial anus, the result would have been disastrous to the patient. The second operation consisted in performing an end-to-end anastomosis of the bowel above and below the seat of obstruction. He did not regard lateral anastomosis as preferable to the end-to-end method, and claimed that the latter was just as easy and, further, that it maintained the continuity of the intestine. He pointed out to Dr. Worrall that it was technically more correct to speak of an intestinal fistula when the small intestine high up was involved than to speak of a fæcal fistula. The discharge from the opening in the upper segments of the small intestine was not fæcal. It caused excoriation of the abdominal skin and consequent suffering. Moreover, it did not tend to heal spontaneously, as a true fæcal fistula did.

In regard to the amount of gut removed, he pointed out that he had seen nearly one-third of the whole length of the small intestine excised for thrombosis of the mesenteric artery. Bell had removed five feet of intestine. Dr. Worrall had not given any explanation of the cause of the volvulus. It was a rare thing for volvulus to take place in the small intestine. He explained this on anatomical grounds.

Dr. Lipscomb called attention to the history of Dr. Worrall's case. A total hysterectomy had been performed at an earlier date. At the operation for obstruction, a long appendix was discovered adherent low down in the pelvis. He raised the question whether Dr. Worrall did not examine the appendix as a routine method in all cases in which the abdomen was opened. If the appendix were found to be long, the speaker thought that it should be removed.

Dr. Flynn pointed out that it was probable that there was an identity in the pathology of all the necroses in the alimentary canal. Necrosis of the tissues of the tract depended in acute cases, *e.g.*, appendicitis, perforating gastric or duodenal ulcer, etc., on the action of septic micro-organisms. In sub-acute cases, *e.g.*, strangulated hernia, intussusception, volvulus, etc., it depended mainly on interference with the blood supply. In the acute condition, bacteria acted primarily on the tissues, and through the inflammation of the vessel, and subsequent thrombosis, caused interruption of the blood supply. In the sub-acute condition, the interruption of the blood supply came first, and then the organism began to act. He raised the question whether the appendix was not the primary cause in Dr. Worrall's case. He then turned his attention to the superior mesenteric artery. This artery was peculiar in one respect. Although not an end artery anatomically, it acted as one. Like true end-arteries, it had great difficulty in recovering itself after mechanical disturbance. There was greater difficulty in the case of the superior mesenteric artery than when the cœliac or inferior mesenteric were occluded. The work of Litten on dogs demonstrated this, and found confirmation in the work of Emil Fricker, of Berne. In conclusion he

expressed the opinion that the success of the operation depended more on whether the intestine cut through was healthy than on whether the anastomosis were lateral or end-to-end. In view of the fact that the infective process was most intense in the loop, but no means confined to it, it followed that removal should be free. The amount of small intestine removed was not material, provided that not more than the length of the large intestine were excised. This would be about 5 feet. He wished to put the matter epigramatically. The danger of lateral anastomosis was end-to-end; that is, the spread of the process might continue at either of the cut ends. On the other hand, the danger of end-to-end anastomosis was lateral; that is, that the surgeon had to guard against extension in the messentery.

Dr. Bullock said that he had been taught to pull the large intestine out and drain it in case of intestinal obstruction. On the other hand, when the small intestine was involved, anastomosis should be carried out. He spoke of a case in which anastomosis had been performed, and reverse peristalsis had been produced. The patient did well at first, but later on the bowel got kinked. An operation was performed, but the patient was too far gone, and died. He suggested that the pelvic peritoneum possessed greater resistence than the abdominal peritoneum. When the process was limited to the upper part of the abdomen, the patients did less well than when the changes were found in the pelvis.

Dr. Worrall replied to the various points raised. He expressed the opinion that practitioners should be familiar with sudden emergencies, and should be prepared to act in them. For this reason he had brought the case to the notice of the members. In regard to the question of iso- or anti-peristalsis, Professor Watson had formed the opinion that it made no difference. In this operation, he was working at great speed, and carried out the anastomosis without losing time in determining whether the peristalsis was reverse or continuous. He accepted Dr. Binney's technical correction in regard to the difference between intestinal and fæcal fistula. When the large intestine was implicated, he brought the bowel outside, since there was less objection to a true fæcal fistula than to an opening in the small intestine. He would even advise a lateral anastomosis in addition to bringing the intestine outside. He agreed that the amount of intestine removed was not a material point. It was just as difficult to remove two inches as two feet of intestine.

To Dr. Lipscomb's question, he answered that he always examined the appendix, and entered the condition in his notes. In the case under discussion, it had been examined at the time when the hysterectomy had been carried out, and had been found to be quite normal. Had it been elongated, he would have removed it.

A clinical meeting of the Victoria Branch, conjointly with the Melbourne Pædiatric Society, was held at the Children's Hospital, Melbourne, on May 19, 1915.

Dr. G. S. Robinson exhibited two cases of *bilateral talipes equino-varus*. The operative treatment had been undertaken by Dr. W. Kent Hughes. In each case a wedge of bone had been excised from the outer side of the tarsus. The result was eminently satisfactory.

Dr. F. Hobill Cole showed an interesting case of *megalocolon*.

Dr. W. A. Wood exhibited the *appendices vermiformes* removed from patients suffering from *appendicitis*. He spoke of the pathology of the cases in the light of both the morbid anatomy and the clinical symptoms.

Dr. A. Jeffreys Wood showed five cases.

(i) *Double congenital dislocation of the hip-joints*, in which reduction had been carried out successfully. Skiagrams of the condition were demonstrated.

(ii) *Sporadic cretinism*. The patient was a female, aged 18 years. The history given was as follows:—At the age of 4½ years she was unable to stand or talk; her height was 27¾ inches, i.e., 12 inches below the average for her age. At this time treatment had been undertaken. At 13½ she was in the 4th class at a State school, read and wrote well, and was able to work fractions in arithmetic. She was a bright and average child. Menstruation set in at 14; she left school at 16 years, when she was in the 8th grade. Owing to poverty she had stopped taking thyroid extract, and had become dull and slow again soon after leaving school. The temperature at that time was subnormal. Thyroid medication had been begun again two months before, ten grains being the dose given. Her weight was 6st. 4lb. 11 oz., and her height 4ft. 9⅜in.

(iii) A case of *tongue swallowing*, with cleft palate, limited to the soft palate. The patient was 6 years of age. The tongue was bifid and ill developed. During infancy, when lying on her back, the tongue fell back into the pharynx and symptoms of asphyxia ensued. The symptoms were relieved by inducing reflex sucking movements, or by pulling the tongue forward. The frenum was absent. She was not able to sit up until she was one year old. The lower jaw was badly developed, the tongue was small, and the notch was still recognizable. The child still snored, and during the sleep, the tongue tended to fall back. At the age of 18 months she slept quietly, and the breathing during sleep was free. She began to walk at this age.

(iv) *Encephalitis followed by right-sided hemiplegia*. The patient was a male child aged 18 months. The onset was typical, the boy being suddenly seized with a severe convulsion accompanied by a rise in temperature to 105° F. The convulsion lasted for about eight hours, and was followed by shorter seizures during the following 48 hours. The hemiplegia was not noted for another 24 hours. While the child had been able to walk and talk prior to the onset of the illness, he had become unable to walk after the attack, did not recognize his parents, and was dull mentally. The prognosis in the case was bad. The development of the left side of the cerebrum and of the right side of the cerebellum would probably be markedly impaired, and Dr. Wood feared that epilepsy would develop later. He pointed out that encephalitis was the commonest cause of hemiplegia in children between the age of 6 months and 6 years.

(v) *Chorea*. The patient demonstrated had been in bed for five months. Dr. Wood was of opinion that rest was the only treatment capable of doing good in these cases. Chorea in children usually lasted for from 6 to 12 weeks.

Dr. A. E. R. White showed two cases of *infantile paralysis*. In the one the affection was of recent origin, while in the second it was of old standing.

Dr. D. M'M. Officer demonstrated a case of *osteomyelitis* of the tibia. The sequestrum had been removed. A very imperfect deposit of new bone had taken place, and there was a breach in the continuity of the bone at the lower end of the upper fourth. The new bone formed in the lower three-fourths of the tibia was thin, and toward the ankle-joint tapered to the thickness of a penholder. There was not sufficient periosteum to justify an attempt to transplant a homologous bone graft. As the leg was quite useless, Dr. Officer determined to transplant the lower three-fourths of the patient's own fibula into the upper part of the defective bone. The first stage had been carried out, and it was seen in the skiagrams exhibited that bony union had taken place. Dr. Officer proposed to deal with the lower end of the fibula in a similar manner. Two months after the operation the patient had become infected by *b. pyocyaneus*. He considered it probable that the infection was derived from another child in the ward.

Dr. Hamilton Russell said that he had made the experience that osteomyelitis usually recurred after complete healing had taken place. The infective agent could always be demonstrated in the bone.

Dr. Officer also demonstrated the case of a boy who had been struck on the loin by a swing. He had complained of pain, and had been brought to the hospital four or five hours later. A swelling was found in the lumbar region; there was tenderness in this situation, and hæmaturia was noted. On exploring the kidney he had found that the renal artery had been torn completely through, and the lower pole of the organ detached. The kidney was removed. The skiagrams of the region taken before operation and photographs of the kidney were shown.

Dr. Cole demonstrated a case of a girl aged 3 years, who had been constipated since birth. There was marked abdominal distension. A bismuth meal had been followed into the caecum, where it collected seven hours after the ingestion. It remained in the caecum for four days. An enema containing bismuth could be injected into the trans-

(*Continued on page* 606.)

The Medical Journal of Australia.

SATURDAY, JUNE 26, 1915.

More!

During the course of the past week, messages have been received by the Defence Department from the Imperial Authorities, asking for more medical men for service in England and France, and for duty on hospital ships. The demand on the profession within the next few weeks will be great, and the time has now come when we may with justice ask what the intentions of the Department are in connexion with the medical service. The present needs can be summarized as follows. In addition to the 80 or 90 men already engaged for service, the Imperial War Office has asked for medical officers to staff three auxiliary hospitals, formerly known as convalescent depôts, and for two hospital ships. It is assumed that the hospitals will need at least six practitioners apiece, and the ships four officers, making a total of 26 for this branch of the service. Next, 20 junior men are being sought for general service in Egypt and Turkey, and a second hundred men for service with the R.A.M.C. on duty in England and France. We estimate that the immediate requirements of the Home authorities amount to about 150 medical men. In addition, the Commonwealth will need a special staff to tend to the returning men, computed by the Defence Department at 36 at least. This number appears to us to be low, and we feel justified in extending our general estimate of the number of men required, both with the Home Service and with the Commonwealth Service, at 200.

The demand made at the present time will certainly be supplemented at no distant date. During the continuation of the war, the medical profession will be asked to supply a constant stream of men capable and willing to undertake field or base service. Up to the present, more than 500 medical practitioners have gone to the front. Within a short time, this number will be increased to 700, and no one can say how many will be asked for and obtained by the end of the year. It must be remembered that the medical profession in Australia, including men who have grown old in their service of the public, is only 2,500 strong, all told. The civil population has yielded some 60,000 men, out of a total population of, let us say, five millions. That is a proportion of 1 in 83, or 1.2%. The medical profession is yielding 1 in each 3½, or 28%. But the more important point is the effect on the civil population and on the returning soldiers. Taking the figure of persons remaining in Australia at 4,900,000 and the doctors at 1,800, we have one doctor to 2,722 persons, as compared with one doctor to each 2,000 persons under normal conditions. The public is beginning to recognize that sick people should receive medical attention at the hands of registered practitioners exclusively. If the thinning of the rank continues, a time must come when the profession in Australia will no longer be able to look after our own sick.

It is necessary to cast a glance at the problem in front of the Defence Department in regard to the wounded and sick men returning from Turkey. The scheme which is being prepared by the Defence Department is the basis of a discussion between the Director-General of Medical Forces and the Federal Committee of the British Medical Association, which is being held as we go to press. The New South Wales Branch of the Association offered a short time ago to organize a voluntary medical service, but we understand that this proposal did not meet with the approval of the military authorities. The reason was that the medical men undertaking the work would not be subject to military discipline. But since the demand for more men is being made, it would seem that a more powerful argument would have to be adduced before the proposal should be cast aside. The Mayor of Auckland recently expressed the opinion that the civil and not the military authorities should have the task of looking after the men who have suffered in the country's cause. It must be remembered also that the civil body and not the military is providing the means of looking after these brave men.

The problem is a simple one. Some 5000 or 6000 men are returning to Australia, invalided from wounds or sickness. Some of these men will require special surgical or medical attention, which

can best be given at well-organized hospitals. The honorary surgeons and physicians will be prepared to give time, skill and care to these men, and will not ask for payment, provided that the facilities of hospital treatment are accorded. Next, there will be a large number who can safely be sent to convalescent homes, which a generous public is providing, and here again the civil practitioners will be willing and able to carry out all the treatment required, without any demands for payment. Lastly, there are the men who may be sent to their homes, and who will not require much medical attention, unless some complicating or supervening condition develops. The British Medical Association could, without doubt, make ample provision for them also. The members of the profession are not likely to prefer payment out of funds collected from a charitable public for the wounded soldiers to giving their services gratuitously. So far, we have not heard a valid argument in favour of subjecting those engaged in treating the returning soldiers to military order or discipline. This would necessarily mean much red tape and formality, and, from a practical point of view, it might even be to the advantage of the patients if the attendance were carried out without any such limitations. The obvious advantage of this plan would be that the British Medical Association would arrange with its members who are engaged in civil practice to undertake this work, and, in this way free a larger number of practitioners for service at the front.

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THE WORKERS' COMPENSATION ACT.

Attention has been called in previous issues of *The Medical Journal of Australia* to the action which has been taken by the Council of the Victorian Branch of the British Medical Association in regard to the fees payable to medical practitioners for certificates given in compliance with the Workers' Compensation Act, 1914. As announced last week, the representations made to the Commissioner of the State Accident Insurance Company have resulted in the official adoption of amendments insisted on by the Council of the Branch. The amendments have been published in the Victorian Government *Gazette* of June 9, 1915. This is a matter of some moment. The practitioners in Victoria were asked to perform a duty for the State at a rate of remuneration which was obviously insufficient. The Council of the Branch made a careful analysis of the regulations in so far as they affected Certifying Medical Practitioners, Medical Referees and Assessors. As a result of these deliberations a memorandum was drawn up and issued to the members on March 12, 1915. The memorandum has been published in *The Medical Journal of Australia* (March 27, 1915, p. 299). Members were warned at that time not to enter into any arrangement with an approved insurance company, or with The State Insurance Company, pending further negotiations. A certain number of appointments had been accepted before this warning was issued. The Council advised the holders of these positions not to withdraw unless the Commissioner refused to grant the modifications asked for. Since the amended regulations have been published in the Government *Gazette*, medical practitioners are free to accept the position of Certifying Medical Practitioners under the Act.

The negotiations have been conducted in an amicable spirit, and the Council has been wise in emphasizing the necessity of adequate remuneration for services of this kind. Stress has been laid on the principle rather than on the specific details, and the Commissioner has recognized the right of the British Medical Association to establish principles of this kind.

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PUBLIC HEALTH PROPOSALS IN NEW SOUTH WALES.

The Minister for Public Health of New South Wales spoke of his intentions in regard to public health matters at a meeting of the Health Society held at the Town Hall, Sydney, on June 14, 1915. The chief points dealt with were the disposal of garbage and rubbish, the establishment of a drug factory, the prevention and cure of consumption and the introduction "of a system that will make for painless birth." The speech does not contain sufficient detail in regard to the first three points to admit of analysis or criticism. The policy appears to be a continuation of that introduced by Mr. Flowers, and the proposed reforms undoubtedly aim at the removal of admitted evils.

In regard to the last point, it would seem that Mr. Black has derived his information from a sensational article in *Nash's Magazine*, written by one Vance Thompson, whose knowledge of drugs and obstetrics appears to be nil. The preparation to which Mr. Black referred in his speech has been given the absurd name of *morphine désintoxiquée*, and the statement is made that this represents the product of "chlorhydrate of morphine," by which

we presume he means the hydrochlorate of morphine (Mr. Vance Thompson's chemical terminology is as unreliable as the rest of his hysterical effusion), after treatment with a living ferment. The product is further stated to be a "regularly crystallized substance," in which property it appears to emulate the salt of morphine itself. What the living ferment is has not been disclosed, but if any action were exercised on the alkaloid by a ferment, the result would necessarily be dissociation, with a corresponding loss of the narcotic activity of the former. A number of preparations, including the one under discussion, have been puffed in the past by the curious statement that they have received the recognition of the French Academy of Medicine. *L'Académie de Médecine*, which is associated with the University of Paris, does not give a blessing to drugs or preparations until there is ample evidence of their clinical value. And in this instance there appears to be very little. For this new crystalline morphine preparation, two claims are made. The first is that it is not toxic, either to the mother or to the child. The second is that it is so complete an anodyne that it abolishes pain in 84 out of 112 cases, *i.e.*, in 75%. So does morphine. In regard to the former claim, Mr. Vance Thompson certainly adduces no evidence.

Mr. Black has got out of his depth. He, a politician, is constituting himself a judge of the pharmacological action of a preparation, without having the protocols of the physiological experiments to study, and without knowing what it really is. He goes much farther. He wants to employ medical men to give this preparation, of which he can know nothing, to women in child-birth, in spite of the fact that no experienced obstetrician would sanction a routine treatment of this kind. Medical practitioners will never consent to be told by a Minister of Health, or indeed by the most learned and experienced individual outside the medical profession, how they are to treat their patients.

Objection should be taken to the practice of labelling drugs with a false guarantee of activity. Not long ago a medical man was guilty of advising obstetricians to throw away their forceps and to pin their faith on pituitary extract. Were this advice followed, the maternal and fœtal mortality would certainly increase. For many years the use of scolamine and morphine in child-birth has enjoyed a considerable reputation, not so much on account of the analgesic effect, but because it exercises a strong action in producing amnesia. But the so-called *Dämmerschlaf* (clumsily and erroneously translated by the Americans into "twilight sleep") is not induced in every case, even in Krönig's clinic at Freiburg. It is our duty to issue a grave warning against the indiscriminate use of any drug, either by the public or by members of the profession. No drug which can exercise a powerful pharmacological action can possibly be free from danger. It is the task of the pharmacologist to ascertain the margin between the therapeutic and the toxic doses of useful drugs. The wider this margin, the safer, relatively speaking, the drug; but we repeat no powerfully acting drug can be regarded as safe, unless given with knowledge and applied with discretion in selected cases. There is but little doubt that the indiscriminate use of quinine in malaria, of mercury and salvarsan in syphilis, of emetine in dysentery, and of tuberculin in tuberculosis, has caused disaster in countless instances. We trust that Mr. Black will not endeavour to teach doctors their business.

THE SALE OF QUACK REMEDIES IN VICTORIA.

On June 15, 1915, the Honourable J. P. Jones asked the Minister of Public Health, in the Legislative Council, "if he would direct that action be taken, as had been done in New South Wales, against vendors of quack remedies, whose claim to cure serious diseases results in poor people being induced to spend money they can ill afford, and causes delay in seeking scientific treatment by skilled observers." To this question, the Honourable J. Drysdale Brown replied that no power existed to prevent the sale of quack remedies in Victoria. The reply being unsatisfactory to Mr. Jones, he moved the adjournment of the House, in order to raise the whole question. He urged the introduction of legislation providing the Ministry with the powers necessary to take action in these cases. He drew attention to the action which is being taken in New South Wales in regard to remedies for which impudent claims are made. An enormous amount of harm was done by the sale of these vaunted remedies, and he maintained that the loss of life from nostrums in Victoria was great. The motion was seconded by the Honourable R. B. Rees, who reminded the House that the Pharmacy Board had requested the Ministry to introduce certain amendments of the Public Health Act to cope with the trouble. He was not inclined to advise the prohibition of secret remedies altogether. He thought that some of them even did good, and he also favoured the practice of chemists prescribing over the counter for simple ailments. Incidentally, we may point out that Mr. Rees did not explain how the pharmacist is to diagnose the "simple ailment," nor what means should be taken to distinguish between conditions for which the unqualified man might safely prescribe, and those which should be treated exclusively by persons trained and registered as medical practitioners. The Minister induced Mr. Jones to withdraw his motion, by stating that he had given this matter serious consideration. He expressed astonishment that people were silly enough to take these remedies. The Minister promised that the matter should not escape attention. In other words, Mr. Jones has called attention to a real grievance, and all the satisfaction he has received is to hear the usual parliamentary equivalent for what in ordinary life would be expressed in the sentence "We are not interested in this matter." Not even a Minister can be ignorant of the human tendency of following the unorthodox rather than the orthodox, and the only way to protect stupid people from themselves and from rogues is to prohibit the sale of secret or proprietary remedies for which the claim is made that they can cure disease.

British Medical Association News.

(*Continued from page* 602.)

verse colon and joined the bismuth in the caecum, but the caecal contents could not be followed into the colon. The Wassermann test was positive. The child had been under antisyphilitic treatment for four months, and had a good appetite, and was cheerful. The distension had become much less.

Dr. H. Douglas Stephens showed a number of cases.

(i) *Congenital dislocation of the left hip joint* in a girl aged 4¾ years. The dislocation had been reduced.

(ii) A series of cases illustrating various congenital malformations, including *hypertrophic stenosis of the pylorus, spina bifida, imperforate anus, ectopia vesicae,* etc.

(iii) A baby who had been operated on at the age of 4 months for *ileo-caecal intussusception.* The bowel had been resected.

(iv) Various instances of *infantile paralysis.*

MEDICO-POLITICAL.

It is with great satisfaction that we learn that Dr. J. C. Verco has accepted nomination for the post of President of the South Australian Branch. Dr. Verco has been approached on many occasions in the past to stand again for election to this position, but has persistently refused. The present time is most opportune for his election. Within a week or two the British Medical Association will be taking an active part in the organization of the medical service for the treatment of the wounded. As the leader of the profession in South Australia, and as a man of unusually good judgement, he will fill the office to the credit of the Branch and to the full satisfaction of its members and of the public. We may recall the fact that Dr. Verco was President of the first Australasian Medical Congress, held in Adelaide in 1887, and that he was an honorary physician at the Adelaide Hospital for close on 30 years. We congratulate the South Australian Branch on the selection of its President for 1915-16.

The following have been elected members of the New South Wales Branch:—

Dr. George Mervyn Hay, Royal Prince Alfred Hospital.
Dr. Claude John Tozer, Royal Hospital for Women, Paddington.

The following have been elected honorary associate members of the Branch:—

Mr. R. C. Winn, North Sydney.
Mr. C. W. Sinclair, Manly.
Mr. J. M. Maclean, Chatswood.

The following have been nominated for election to the New South Wales Branch:—

Dr. Nathan Marcus Adler Alexander, Sydney Hospital.
Dr. Arthur V. Meehan, Sydney Hospital.
Dr. Charles Kingsley Parkinson, Sydney Hospital.
Dr. Rolan Ian Smith, Sydney Hospital.
Dr. Andrew Eric Aspinall, Sydney Hospital.
Dr. Keith S. McA. Brown, Sydney Hospital.
Dr. Cecil C. Coghlan, Sydney Hospital.
Dr. F. Curtis-Elliott, Sydney Hospital.
Dr. Thomas Jones, Sydney Hospital.
Dr. Arthur H. Joyce, Sydney Hospital.
Dr. Robert K. Rae, Sydney Hospital.
Dr. Stanley A. Railton, Sydney Hospital.
Dr. George C. Willocks, Sydney Hospital.
Dr. Francis J. McCarthy, Sydney Hospital.
Dr. William A. Bean, Wentworth Road, Burwood.
Dr. John R. MacCulloch, Bank of Australasia, Threadneedle Street, London.
Dr. Thomas Thomson, Taralga, New South Wales.
Dr. Roy Arnold Lovejoy, Royal Alexandra Hospital, Camperdown.
Dr. Edith Weeks, "Bokara," Cremorne, New South Wales.

We have been asked to acknowledge in the name of the Treasurer of the Queensland Branch the following contributions to the Belgian Fund:—

		£	s.	d.
	Amount previously acknowledged	117	19	3
Dr.	Beet, W. A., Beaudesert (June contribution)	2	2	0
„	Cameron, J. A., Ipswich (June contribution)	2	0	6
„	Cooper, Lilian, Brisbane (June contribution)	2	0	0
„	Hankins, G. T., Warwick (June contribution)	1	0	0
„	Hemsley, J. C., Brisbane (June contribution)	1	1	0
„	Humphrey, E., Townsville (June and July contributions)	6	6	0
„	Kerr Scott, E. W., Brisbane (June contribution)	1	1	0
„	Roe, J. M., Augathella (June and July contributions)	1	0	6
„	Thelander, C. A., Brisbane (June contribution)	1	0	0
„	Turner, A. J., Brisbane (June contribution)	2	2	0
„	Wallace, T. I., Longreach (June contribution)	1	1	6
	Total	£138	13	9

BELGIAN DOCTORS' RELIEF FUND.

New South Wales.

The Council of the New South Wales Branch has received 15 additional subscriptions to the Belgian Doctors' Relief Fund during the week ending June 22, 1915:—

		£	s.	d.
	Amount previously acknowledged	578	0	6
Dr.	Bell, H. T. S., Murwillumbah	1	1	0
„	Blomfield, C. R., Cessnock	2	2	0
„	Clatworthy, H., Petersham	3	3	0
„	Halcomb, C., Lindfield	1	1	0
„	Johnston, A. C., Riverstone	2	2	0
„	Jones, R. H., Sydney	2	2	0
„	Kerr, A. L., Parramatta	2	2	0
„	Legge, F. R., Swan Hill, Vic.	1	1	0
„	Machattie, T. A., Bathurst	2	2	0
„	Michell, R. T., Molong	1	1	0
„	Parramore, G. W., Nabiac	1	1	0
„	Pym, C. B., Parramatta	5	0	0
„	Roberts, L. W., Orange	1	1	0
„	Thring, E. T., Sydney	5	5	0
„	Wood, P. M., Ashfield	1	1	0
	Total	£609	5	6

THE TOBACCO FUND.

Subscriptions to our Tobacco Fund for the Australian soldiers have been coming in well during the past week. We had hoped that the response would have been more general, and that a large number of medical practitioners would have sent postal notes for one or a few shillings. As will be seen from the appended list, the sum of over £24 has been made up of a number of more generous gifts.

Amount previously acknowledged, £2 2s.; Dr. A. E. Barrington, Vic., 3s.; Dr. Challands, N.S.W., 2s.; Dr. P. G. Clarke, Vic., 2s. 6d.; Colac District Patriotic Committee, £12; Dr. J. I. C. Cosh, N.S.W., 5s.; Dr. M. Crivelli, Melb., 2s.; Dr. G. J. D. Davies, Tas., 10s. 6d.; Dr. F. A. Deravin, Vic., 5s.; Dr. A. A. Doyle, Brisbane, 5s.; Dr. W. H. Elworthy, Brisbane, 10s.; Dr. M. Erichsen, S.A., 10s.; Dr. R. H. Hill, N.S.W., 5s.; "Inveterate Smoker," £1 2s.; Dr. J. Jamieson, Melb., 5s.; Miss Bronnie Jones, Melb., 1s.; Dr. R. H. Marten, Adelaide, 7s. 6d.; Dr. L. G. Muirhead, S.A., 5s.; Dr. J. Pollock, Vic., 5s.; Dr. M. L. Scott, S.A., £1; Dr. D. Skinner and Mr. R. W. Travis, Vic., 10s. 6d.; Dr. F. C. Stevenson, N.S.W., £1; Dr. Clara Stone, Melb., 2s.; Miss Stone, Melb., 1s.; Miss Elva Thomson, Brisbane, 3s.; Dr. A. Norris Wilkinson, Vic., £1 1s.; Dr. A. Jeffreys Wood, Melb., £1 1s.; Total, £24 6s.

University Intelligence.

THE UNIVERSITY OF QUEENSLAND.

An important meeting was held on June 11, 1915, at the University Hall, Queensland, for the purpose of considering methods of assisting the Defence authorities in connexion

with the war. Professor A. G. Gibson, the President of the Board of Faculties, was in the chair, and a large number of professors and members of the University staff were present. The Chairman pointed out that even more important than the supply of men was the supply of munitions. He held the opinion that success would depend on an adequate supply. Australia could produce all that was required. After a full discussion, it was resolved:

> "That this meeting resolve itself into a University War Committee, with the object of giving all possible assistance to the Defence authorities during the war."

Sub-committees were appointed for the purpose of dealing with (1) the natural and industrial sources of war material, (2) the organization of factories for the production of war materials, (3) the organization of public lectures, (4) the extension of existing rifle clubs.

An executive committee was formed, and this committee was instructed to draw up a scheme for carrying the objects of the War Committee into effect.

Correspondence.

LEAD-POISONING IN CHILDREN.

Sir,—Although I have nothing new to write on this subject, its importance justifies me in making a small demand on your space. The occurrence of lead-poisoning among children in Queensland was first recognized by Dr. Lockhart Gibson and myself, nearly a quarter of a century ago, and, although it was many years before it was generally recognized by the profession, this object seems now to have been attained. But as to the causation, there seems to be no such general agreement. The true causation was first pointed out by Dr. Gibson (*Australasian Medical Gazette*, 1904, p. 149), and I have no doubt myself as to its correctness. Let me briefly summarize his explanation. Lead-paint is dangerous only in two conditions, firstly when it is fresh and sticky, and secondly when it is weathered, dry, and powdery. The first stage is short, and easily guarded against. The second stage is common on outside surfaces exposed to weather, is of long continuance, and extremely dangerous, especially on the railings of verandahs, which are constantly handled by children. The dry powder sticks to their moist hands, and the hands convey it into the mouths of those children who suck their fingers or bite their nails. I believe in this theory, firstly because it is firmly based on observed facts, and secondly because it satisfactorily accounts for a number of facts in the occurrence of these cases, as no other theory that has been suggested will do. A theory based on observed facts, and accounting for a number of other facts, has a very sure basis.

The observed facts are: (1) Nearly all houses in Queensland towns have verandahs, surrounded by wooden railings covered with lead paint. On rubbing one's hand over these railings, it is usually found that, unless the paint is comparatively fresh, the powdered paint covers the surface of the hand. I may say that I try this simple experiment on every house in which I visit a case of lead-poisoning. (2) Small children frequently pass much of their time on the verandahs, and are continually fingering the railings. (3) Small children frequently put their fingers into their mouths, and a proportion of older children bite their nails.

The peculiaries of the occurrence satisfactorily explained are: (1) Cases of lead-poisoning have been observed coming from nearly every town of any size in Queensland, the use of painted wooden houses being nearly universal. (2) Cases do not come from country districts, where the houses are not painted outside, or do not have verandah railings. (3) Cases do not occur in other States, where the people do not live in wooden houses; but a few cases have occurred in New South Wales, where some of the houses are similar to those of Queensland. (4) Although the number of children affected with lead-poisoning observed by us is now very large, in no case have we known any adult member of the family to have been affected. (5) The commonest age affected is between two and eight years. Infants in arms appear to be exempt, and older children suffer less often. (6) Older children suffering from lead-poisoning are nearly always nail-biters. This is not so constant in younger children, but the majority of young children put their fingers into their mouths. (7) Although series of cases have occurred in families of children, it is not uncommon for one child to be picked out by the disease. This child will be found, by inquiry, to be specially exposed to infection by its habit of playing on the verandah, of sucking its fingers, or of biting its nails.

Lead-poisoning among children is seldom recorded as a cause of death. I believe that a percentage of cases of fatal convulsions of unknown origin is so caused, and, in default of chemical examination, such cases cannot be detected, unless there are signs on the gums, and such signs are the exception, not the rule, in children suffering from indubitable plumbism. It causes an immense amount of suffering, a very great deal of chronic ill-health, many children are crippled, and a few blinded. If the theory here expounded be correct, all this might be prevented by a simple regulation to the effect that verandah railings and other outside woodwork exposed to the handling of children must be painted only with zinc white or some other paint containing no lead.

Yours, etc.,

A. JEFFERIS TURNER,
M.D. (Lond.), D.P.H. (Camb.).

Brisbane, June 14, 1915.

Personal.

It is with great regret that we have to record the death of Dr. John I. Sangster, of Glenelg, South Australia. Dr. Sangster was some time a member of the Council of the South Australian Branch of the British Medical Association. We hope to publish a short account of his career in the next issue of the *Journal*.

Widespread sympathy will be felt with Dr. Challinor Purchas, of Auckland, in his recent bereavement. As is well known, Dr. Purchas, who was President of the Australasian Medical Congress, held at Auckland in 1914, joined the New Zealand Army Medical Corps early in the war. At a later date, Mrs. Purchas (née Morse), who was a nurse before her marriage, volunteered for service, and was appointed nurse at one of the hospitals in Alexandria. We learn that Mrs. Purchas contracted enteric fever while carrying out her duties, and died of this disease on June 15, 1915.

Dr. G. R. Adcock, of Tarnagulla, has sold his practice to Dr. Alan McCutcheon. Dr. Adcock has announced his intention of making a three months' holiday trip to Japan, prior to journeying to England.

Dr. C. G. Berge, of Grenfell, has been appointed a Justice of the Peace for New South Wales.

Dr. R. Dey, of Bourke, has been appointed Deputy-Licensing Magistrate.

Dr. Moulden, of Broken Hill, met with a serious motor-car accident on the evening of June 7, 1915, while returning from the house of a patient. We are informed that his injuries are not likely to incapacitate him for long.

Dr. J. M. L. Moray, of Cork Station, Winton, Queensland, has removed to Jundah.

Dr. J. I. Parer has resigned his position of Senior Resident Medical Officer of the Fremantle Public Hospital, Western Australia.

Medical Appointments.

Dr. R. A. Goode has been appointed Public Vaccinator at Port Lincoln, South Australia.

Dr. Costelloe has been appointed Officer of Health for Williamstown, Victoria, during the absence on service of Dr. H. R. Maclean.

Dr. William Begg has been appointed Government Medical Officer at Wauchope, New South Wales, in place of Dr. R. R. P. S. Bowker (resigned).

Dr. Cecil Aubert Finley has been appointed Government Medical Officer at Adelong, New South Wales, in place of Dr. W. L. Bond.

Dr. Henry S. Maw has been appointed Government Medical Officer at Candelo, New South Wales, in place of Dr. G. M. Hunt (resigned).

Dr. C. P. B. Clubbe has been appointed a member of the Medical Board of New South Wales, in place of Dr. F. H. Quaife (resigned).

Dr. H. L. Stafford has been appointed Junior Medical Officer, Lunacy Department, New South Wales.

Dr. F. H. Watson has been appointed Government Medical Officer at Bowral, New South Wales.

Dr. Robert Brummit has been appointed a member of the Medical Board of South Australia.

Dr. Ellen M. Wood and Dr. P. S. Clarke have been appointed Government Medical Officers at Murgon and Cairns, Queensland.

Dr. Clive Nigel Smith has been appointed Captain in the A.A.M.C. (3rd Military District).

Proceedings of the Australasian Medical Boards.

NEW SOUTH WALES.

The following have been registered under the provisions of the "Medical Practitioners Act of 1912" as duly qualified medical practitioners:—

Exton, Harriette Martha, M.B., M.S., 1915, Univ. Sydney.
Jones, John Thomas, M.B., 1915, Univ. Sydney.
Morgan, Idris, M.B., 1915, Univ. Sydney.
Voss, Dorothy Muriel, M.B., M.S., 1915, Univ. Sydney.
Woods, Robert Grieve, M.B., B.S., 1915, Univ. Melbourne.
Cockburn, Patrick, M.B., B.S., 1914, Univ. Adelaide.
Zions, Norman, M.B., M.S., 1915, Univ. Sydney.
Wilbe, Ernest Edward, L.S.A. (Lond.), 1907; D.T.M. Liverpool, 1913.
Weeks, Edith, M.D., 1906, Univ. Toronto.
Parkinson, Sidney Philip, M.B., 1914, Univ. Sydney.

SOUTH AUSTRALIA.

The following have been registered under the provisions of the "Medical Act, 1880," as duly qualified medical practitioners:—

Appleford, Sydney Theodore, M.B., B.S., Melb., 1913.
Brownell, Hugh Percival, M.B., B.S., Melb., 1913.

Diary for the Month.

June 29.—Vict. Branch, B.M.A., Eye and Ear Section.
June 29.—N.S.W. Branch, B.M.A., Organization and Science Committee, Medical Politics Committee.
June 30.—Vict. Branch, B.M.A., Council.
July 2.—Q. Branch, B.M.A., Monthly.
July 6.—N.S.W. Branch, B.M.A., Council (Quarterly).
July 7.—Vict. Branch, B.M.A., Monthly.
July 8.—Vict. Branch, B.M.A., Council.
July 9.—S. Aust. Branch, B.M.A., Council.
July 9.—N.S.W. Branch, B.M.A., Clinical Evening.
July 13.—Tas. Branch, B.M.A., Monthly and Council.
July 14.—Melb. Pædiatric Soc.
July 16.—Western Med. Assoc. (Cowra), N.S.W.
July 16.—E. Suburbs Med. Assoc., N.S.W., General.
July 17.—N. Suburbs Med. Assoc., N.S.W., General.
July 20.—N.S.W. Branch, B.M.A., Executive and Finance Committee, Ethics Committee.
July 21.—Vict. Branch, B.M.A., Clinical Evening.
July 21.—W. Suburbs Med. Assoc., N.S.W., Clinical Evening.
July 21.—W. Aust. Branch, B.M.A., General.
July 23.—Q. Branch, B.M.A., Council.
July 27.—Vict. Branch, B.M.A., Eye and Ear Section.
July 27.—N.S.W. Branch, B.M.A., Organization and Science Committee, Medical Politics Committee.
July 28.—Vict. Branch, B.M.A., Council.
July 29.—South Aust. Branch, B.M.A., Monthly.

Our attention has been called to an inaccuracy in the "Diary for the Month" published last week. The quarterly meeting of the Council of the New South Wales Branch will be held on July 6, 1915, while the clinical evening will be held on July 9.

Covers for binding *The Medical Journal of Australia* for Vol. I., 1915, can be obtained on application to the Manager, B.M.A. Building, 30-34 Elizabeth Street, Sydney. The price of a cloth cover is 2s., and of half leather 3s. 6d.; postage, 7d.

Important Notice.

Medical practitioners are requested not to apply for any appointment referred to in the following table, without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, 429 Strand, London, W.C.

Branch.	APPOINTMENTS.
QUEENSLAND. (Hon. Sec. B.M.A. Building, Adelaide Street, Brisbane).	Brisbane United F.S. Institute. F.S. Lodges at Longreach.
WESTERN AUSTRALIA. (Hon. Sec. 230 St. George's Terrace, Perth).	Swan District Medical Officer. All Contract Practice Appointments in W.A.
NEW SOUTH WALES. (Hon. Sec. 30-34 Elizabeth Street, Sydney).	Australian Natives Association. Balmain United F.S. Dispensary. Burwood District F.S. Institute. Canterbury United F.S. Dispensary. Goulburn F.S. Association. Leichhardt and Petersham Dispensary. M.U. Oddfellows Med. Inst., Elizabeth Street, Sydney. Marrickville United Friendly Societies' Dispensary. Mullumbimby District Friendly Societies. N.S.W. Ambulance Association and Transport Brigade. N. Sydney United F.S. People's Prudential Benefit Society. Phœnix Mutual Provident Society. F.S. Lodges at Braidwood. F.S. Lodges at Casino. F.S. Lodges at Lithgow. F.S. Lodges at Mudgee. F.S. Lodges at Orange. F.S. Lodges at Parramatta, Penrith, and Auburn. F.S. Lodges at Wellington. Newcastle Collieries— Killingworth. Seaham Nos. 1 and 2. West Wallsend.
SOUTH AUSTRALIA. (Hon. Sec. 3 North Terrace, Adelaide).	The F.S. Medical Assoc. Incorp., Adelaide.

EDITORIAL NOTICES.

Manuscripts forwarded to the office of this Journal cannot under any circumstances be returned.

Original articles forwarded for publication are understood to be offered to "The Medical Journal of Australia" alone, unless the contrary be stated.

All communcations should be addressed to "The Editor," "The Medical Journal of Australia," B.M.A. Building, 30-34 Elizabeth Street, Sydney, New South Wales.

The following periodicals are required by the Librarian of the New South Wales Branch of the British Medical Association to complete the series for binding. Members who have borrowed these journals are requested to return them as soon as possible,

Lancet, November 7, 1914.
Lancet, November 14, 1914.

JUL 27 1915
UNIV. OF MICH.

Registered at the G.P.O., Sydney, for Transmission by post as a Newspaper. Published Weekly.

THE MEDICAL JOURNAL OF AUSTRALIA

(With which "The Australasian Medical Gazette," and "The Australian Medical Journal" are incorporated.)

The Journal of the Australian Branches of the British Medical Association.

VOL. I.—2ND YEAR—NO. 26. SYDNEY: SATURDAY, JUNE 26, 1915. PRICE 6D.

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"I may say that I tried, with very great success, your Diet on an intractable gastric and intestinal case. I verily believe it was the means of saving the man's life, for he could digest nothing until I gave him your Diet, which speedily brought him round, and enabled him to tide over a very critical period of his ailment. I certainly consider the nutritious qualities of your Diet to be of a high order."

M.B.

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"I am using it myself and find it a good food. I think it is an excellent supper dish for a gouty man, and I sleep well after taking it."

M.D.

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"I used it with a patient I had under close observation, the result was marvellous. She has now had three large tins, and has not been so well for some years. I gave it only at night, an hour before bedtime, and though only taken once in twenty-four hours she has gained over six pounds in weight, while previously she was losing daily. It certainly is a most satisfactory preparation."

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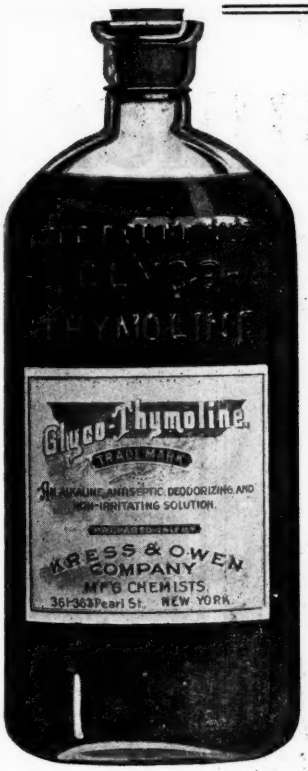

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WEEK END EXCURSIONS.

Week End Excursions are issued throughout the year. See Time Table.

SUNDAY EXCURSIONS.

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EXCURSIONS TO MOUNT BUFFALO.

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South Australian Branch (B.M.A.).
Tasmanian Branch (B.M.A.).

Patriotic Fund for the Relief of Destitute Belgians

Queensland Branch (B.M.A.).

FOR THE SERVIANS:

The Serbian Relief Fund

President: The Archbishop of Serbia

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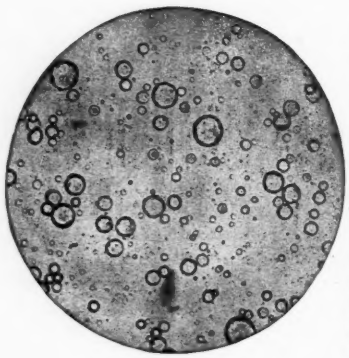
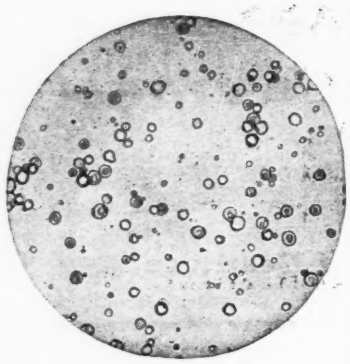


Cow's Milk.



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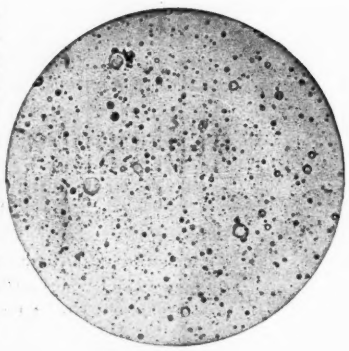
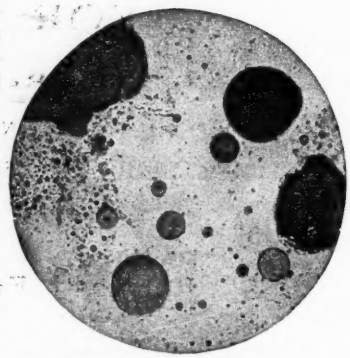


LACTOGEN.



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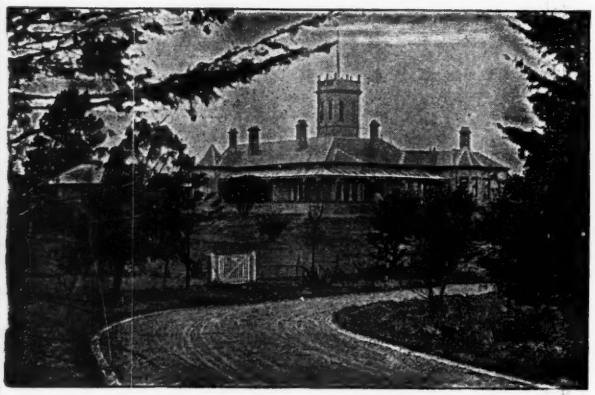

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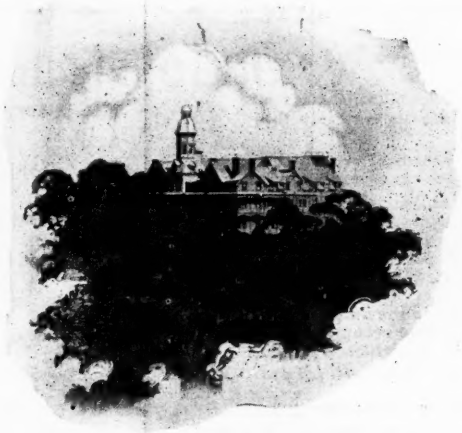

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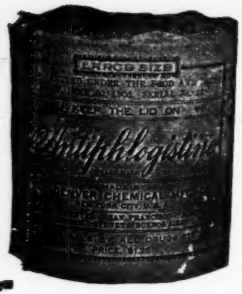

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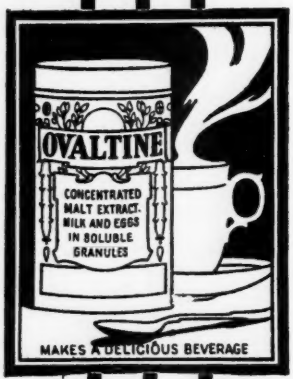

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